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ABSTRACT

Objective scores and judges' ratings, both based on a complex personal assessment battery, were correlated with a pupil-gain criterion of teaching effectiveness and with a number of observationally derived measures of classroom teaching behavior. Twenty-seven primary teachers were studied who had demonstrated consistent patterns of pupil gain over the previous three years, varying substantially in the degree of gain achieved. The relationships of the assessment-based measures to the teaching effectiveness measures are described. In addition, the objective assessment scores and the judgmental ratings are compared in their predictive power. (Author)

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Personal Characteristics Associated with Effective Teaching

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The objectives of this phase of the research program were to identify individual characteristics of attitude, conceptual style, and personality that may be significantly related to teaching effectiveness. The measures used here may be viewed as "distal" variables with regard to a criterion of effective impact on pupil achievement, in contrast to the more "proximal" variables obtained by direct classroom observation of the teachers concerned (see papers by Brophy and Evertson). These distal variables were derived from paper/pencil instruments completed by the teachers themselves at the end of the school year following the four years during which their effectiveness was assessed in terms of pupil gains on standard achievement measures. Of particular interest is the inclusion in this battery of both highly structured (questionnaire) and relatively unstructured (free-response) instruments. Predictive estimates were derived from these data by objective scoring of each instrument separately and also by ratings based on the total assessment file of each teacher. Both the objective scores and the ratings were then correlated with the "proximal" observation-based variables, as well as with the pupil-gain effectiveness criterion.

Sample and Measures

Twenty-seven teachers who had been selected as "consistent" in their relative effectiveness in eliciting pupil achievement gains (see paper by Veldman and Brophy), completed a battery of paper/pencil instruments which included the following:

Questionnaires

Adjective Self-Description (Veldman and Parker, 1970). Yields seven trait-factor scores.

Self-Report Inventory (Bown and Richek, 1967). Yields eight attitude measures.

Views of Life (Peck, Diaz-Guerrero and Lawrence, 1973). Yields 20 scale scores.

Free-Response Instruments

Biographical Information. Covers family, education, health, interests, work history, and self-assessment of attributes and goals.

Concerns Statement (Fuller, 1969). A listing of current personal teaching concerns.

Directed Imagination (Veldman and Menaker, 1969). Write three fictional stories about teaching in 15 minutes.

One-Word Sentence Completion (Veldman, Menaker, and Peck, 1969). Sixty-two item form requiring single-word responses.

These teachers were selected on the basis of pupil-gain data from years 1-3. Each teacher had a pupil-gain score for years 1-4, and an average score for the four years. The personality data were collected in the fifth year.

Procedure

Each instrument was scored on a number of dimensions, according to published procedures. The individual file for each teacher, containing all of the original (unscored) instruments, was thereafter independently evaluated by three experienced judges. Estimates of probable teaching behavior, based on these evaluations, were recorded on the following seven-point rating scales:

1. Subject-matter competence (Interjudge reliability .68)
2. Communication skills (.55)
3. Stimulating imagination (.59)

4. Responsible independence (.58)
5. Poise and self-confidence (.83)
6. Attitude toward students (.53)
7. Teaching style (teacher vs. pupil-centered) (.41)
8. Disciplinary control (.58)
9. Attitude toward supervision (.59)
10. Reaction to own mistakes (.48)
11. Alertness to classroom events (.59)
12. Professional commitment (.39)
13. Summary rating of competence (.60)
14. Ranking on competence (.71)

In addition to the ratings, each judge rank-ordered all 27 folders according to general levels of teaching effectiveness to be expected from the teachers. Inter-judge reliability estimates were then computed among the evaluations of the three judges, and composite evaluations were also computed.

The final stage of the procedure was the calculation of correlations between the variables obtained by objective and clinical scoring of these distal data and the assessments made from proximal classroom observation; with ratings based on short interviews with the teachers; and with the teaching effectiveness criteria derived from analysis of pupil achievement data.

Findings

Table 1 shows that the overall teaching effectiveness ranking based on the assessment battery (COMPASS) correlated .49 with an overall effectiveness rating based on repeated classroom observations; but not with an effectiveness rating based on an interview and not with any of the six pupil achievement-test gain scores. The classroom observers' ratings did not correlate with the pupil gain-scores, either; but the interviewer's two ratings did correlate with the pupil-gain scores in five out of 16 comparisons (.41-.58).

A detailed comparison of the assessment ratings with the MAT gain scores revealed that the lack of correlation was due largely to seven of the 27 cases, three of which were rated very high but had very low pupil gain scores; the others were rated very low but had high MAT gain scores. Taking out these cases, the other 20 cases correlated about .60. Preliminary scrutiny of these off-quadrant cases suggests that the dimensions of effectiveness on which the assessors and the classroom observers agree, but which are not related to the MAT gain measures, may involve quite different kinds of teacher impact on pupils than the MAT measures; dimensions that are positively related to positive, confident, initiative-inducing qualities in the teachers, as opposed to the somewhat negative personal attitudes that were correlated with MAT gains (see Table 2).

Indeed, in the case of the ten teachers with Title I classes, the assessment judges' ratings on such things as lack of defensiveness, alertness to classroom events, professional commitment, and attitude toward supervision were negatively correlated with MAT gains on Arithmetic Reasoning at an extremely high level, ranging from -.84 to -.95. Furthermore, this group showed very large negative correlations between MAT gains on Arithmetic Reasoning and such Biographical items as number of children (-.80), father's and mother's education level (-.95, -.95) number of teachers in family (-.92), self-rating of health (-.80) and years of teaching (-.96). Only number of graduate courses correlated positively with MAT gain (.77).

Table 2 shows the results of separately correlating the total set of "predictor" measures -- objective scores on the various assessment instruments, interviewer ratings and observer ratings, with the pupil achievement-gain scores associated with each teacher, on each of the five subscales of the

Metropolitan Achievement Test, in each of four years. Included in the table are those variables that showed three or more significant correlations out of its twenty comparisons with MAT scores. The assessment-battery score that most often proved significantly related to the MAT gain-scores was the total score on the Views of Life (negatively correlated). This indicates that the teachers whose pupils showed greater MAT gains tend to be psychologically passive, cautious and lacking in self-confidence. The negative correlation of their Emotional Control score indicates, however, that they say they prefer to accept and express their feelings rather than hold them in.

The Adjective Self-Description scores show that teachers with high pupil gains on the MAT describe themselves as unattractive in appearance, and practical rather than idealistic. The Self-Report Inventory correlations show them expressing dissatisfaction with themselves and also dissatisfaction about the relationships they had with their parents.

Factual items from the Biographical Form show that the more children of their own they have, the less MAT-gains their pupils show; whereas their pupils gain more, the more graduate work the teacher has taken, and more if she has earned a Masters degree.

The professional level-of-maturity score on the Concerns instrument correlated second most often with the MAT gain-scores. The more the overt topics they cited dealt with concerns about pupil learning, rather than self-preoccupied concerns, the better their pupils did on the MAT gain criterion. However, when these same responses were evaluated "clinically," presumably for their real, underlying maturity, clarity and perceptiveness, both the rating and the teacher-to-teacher ranking correlated negatively with the MAT scores, raising some question about the genuineness of the overtly expressed concerns, even though overt "professionalism" correlated with MAT gains.

As was true in Table 1, the interviewer's ratings correlated significantly and positively with MAT gains, in eleven out of forty comparisons. The classroom observer ratings also correlated positively with some MAT subscale gains, year by year, although they had not correlated significantly with the four-year averages, in Table 1.

All of the "predictor" measures were taken in the fifth year, after the four years from which the pupil-gain scores were derived; so they were actually "post-dictors." Moreover, in the fourth year, four of the teachers had changed from Title I to non-Title I schools -- a marked change in pupil population, while one teacher had switched the other way. The fourth year also saw a number of the teachers change from the self-contained classroom they had always known to a team-teaching arrangement.

Partly to test the possible effects of temporal changes on the correlations and partly to see if fourth-year alterations particularly affected them, Table 3 was constructed. It shows that the significant correlations among the "predictor" variables and the MAT gain scores are not randomly distributed across the four years. The closer in time the MAT scores are taken, within the first three years, to the fifth-year observations and assessments, the larger is the number of significant correlations, from 21 to 25 to 33. In the fourth year, when numerous changes in type of teaching assignment took place, the number of significant correlations drops to half that (17) of the third year.

Discussion

Two important findings stand out. First, whatever achievement test gains represent as a desirable sign of pupil learning, and therefore of effective teaching, they do not measure whatever it is that the classroom observers and the psychological assessors mutually agreed upon in this study, as important aspects of effective teaching (and pupil learning, by inference).

Second, those variables in the assessment battery whose scores correlated significantly with the MAT gain scores formed a highly consistent and not altogether reassuring pattern: self-doubting, psychologically passive, somewhat unhappy women appeared more likely to generate high pupil gains on achievement tests. Women with children of their own, confident of their own attractiveness and prone to cope with problems in an active, self-reliant way did not produce large MAT gains.

To be sure, the high-gain teachers tended to have more post-baccalaureate education. They talked in a pupil-centered way on the Concerns instrument, although the judge who made a clinical evaluation of these data believed that these teachers quite often were voicing a "party line" of cliches, not necessarily thinking hard and potently about real, specific pupil needs. Nonetheless, the data did show a great deal of conscientious intent and sincere effort on the part of almost every one of the teachers in the sample.

Still, the evidence so far in this study raises some real questions about uncritically taking achievement test gains as a wholly desirable educational yardstick. Putting together the less than totally happy characteristics of the teachers who did induce such gains, with the fact that both the classroom observers and the personality assessors found some common agreement on a presently unidentified kind of teaching effectiveness that is not at all related to achievement test gains, the data suggest that other criteria of good teaching and good learning need to be identified and used. Beyond some moderate point, it almost looks as though those who get children to learn the somewhat mechanical, atomized knowledge and skills tapped by standardized achievement tests might unwittingly deter other kinds of learning, creating a subtly depressing, low risk-taking atmosphere that could conceivably

keep children from learning to cope vigorously, self-reliantly and happily with problems of learning and living. It cannot be too strongly remarked that this is much more speculation than reporting, at this point, but we intend to pursue these leads, especially to identify the behavior that characterizes those teachers whom the observers and assessors thought highly effective, albeit that effectiveness was not reflected in achievement-test gains when that was the sole criterion.

A methodological footnote of possible interest derives from the observation that the closer in time the criterion and "predictor" measures were, the more closely they correlated. This is scarcely a startling or new phenomenon; but it does imply that important changes in behavior and attitude do occur, year by year, perhaps sufficiently large to explain why such a small fraction of teachers (31 out of 115, in this study) show a reasonably consistent pattern of pupil gains on the MAT, over only a three year span.

Having noted some possible dangers in using achievement test gains as the only criterion, or perhaps even the dominant criterion, for judging teaching effectiveness, the only responsible stance is to make constructive suggestions for a better mix of criteria. This will almost certainly continue to include standardized testing of knowledge acquisition. What may be needed are specific procedures for helping teachers to work toward that kind of criterion in a non-trivial, non-mechanical, non-deadening way. Certain needed next steps in research seem to be rather clearly visible in the present data.

Table 1

Correlations of Three Estimates of Effectiveness and Pupil Achievement-Gain Scores (4-Year Average)

	Observer Effect.	Interviewer Effect.	Interviewer Warmth	MAT Gains: Word Know.	MAT Gains: Word Disc.	MAT Gains: Reading	MAT Gains: Arithmetic Comp.	MAT Gains: Arithmetic Reas.	MAT Gains: Average
COMPASS: Effectiveness Rank (10 of 14 r's signif.,.39-.52)	49								
Observers: Effectiveness Rating (0 of 8 r's signif.)									
Interview: Effectiveness Rating (3 of 8 r's signif.)				42	41				41
Interview: Warmth Rating (2 of 8 r's signif.)							42	58	

P .05>.37; P .01>.48

Table 2

Relative General Validity, Using the
Achievement-Gain Score Criteria

20 separate tests: 4 years X 5 subscales of MAT
Listed below are the most successful predictors.

Variable	Significant	Direction
VOL total score	8	Negative ("Passive")
Concerns level score	7	Positive
Number of children	6	Negative
Interviewer-effectiveness	6	Positive
Interviewer-warmth	5	Positive
ASD Attractiveness	5	Negative
ASD Idealism	4	Negative (practical)
Concerns Rating	4	Negative
Concerns Ranking	4	Negative
Number graduate courses	4	Positive
Masters degree	4	Positive
Observer-effectiveness	3	Positive
SRI Self	3	Negative
SRI Parents	3	Negative
VOL emotional control	3	Negative (expressive)

Table 3

Significant Correlations with All "Predictors"

	Y1	Y2	Y3	Y4	
WK	2	3	5	3	13
WD	2	4	4	2	12
R	4	3	5	3	15
AC	2	3	6	1	12
AR	11	12	13	8	44
	21	25	33	17	96

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